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(54) Wood beam

(57) A wood beam for use in floor structures etc. (Figs. 1, 2) comprises a wave-like piece (1) with high wave crests (2) and deep wave troughs (3) cut out from a plywood sheet and secured in longitudinal grooves (6) in ribs (7) by means of its wave crests (2) and/or wave troughs (3). In Figs. 3, 4 the wave troughs (3) are embedded in a concrete layer (8).

FIG. 3

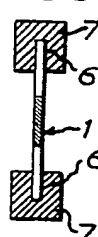
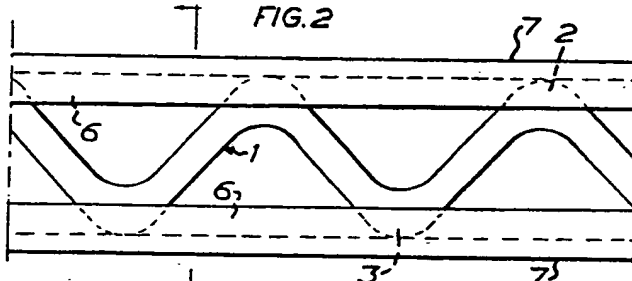


FIG. 5



III

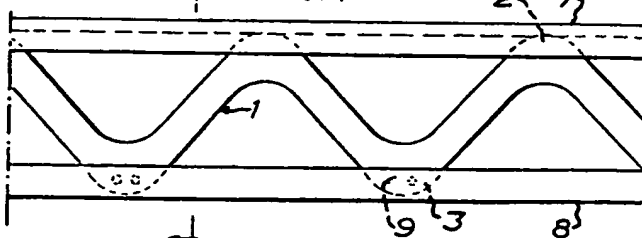
FIG. 2



III

V

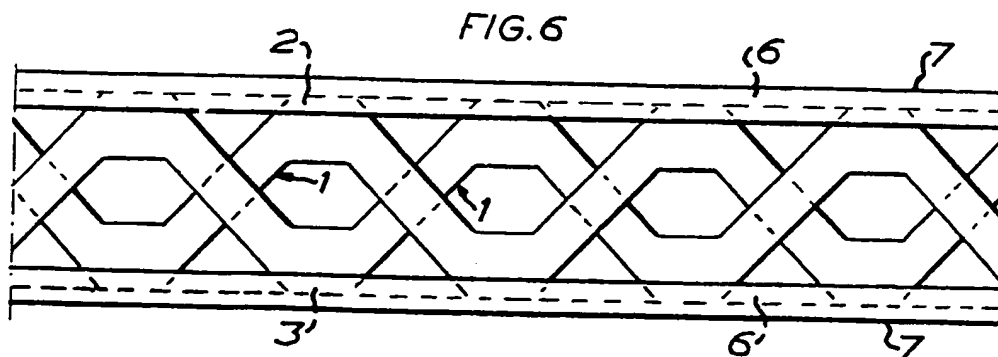
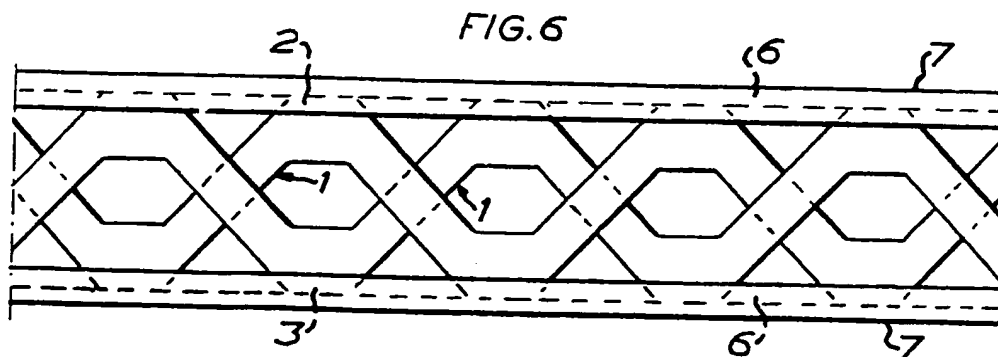
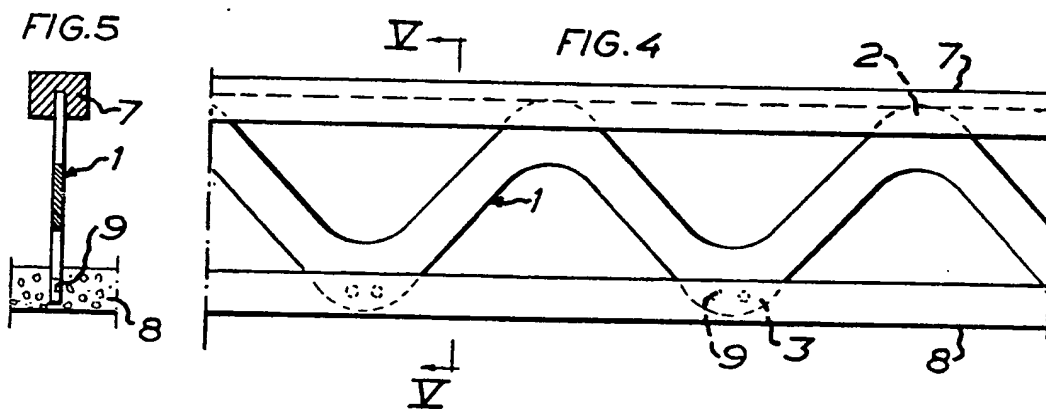
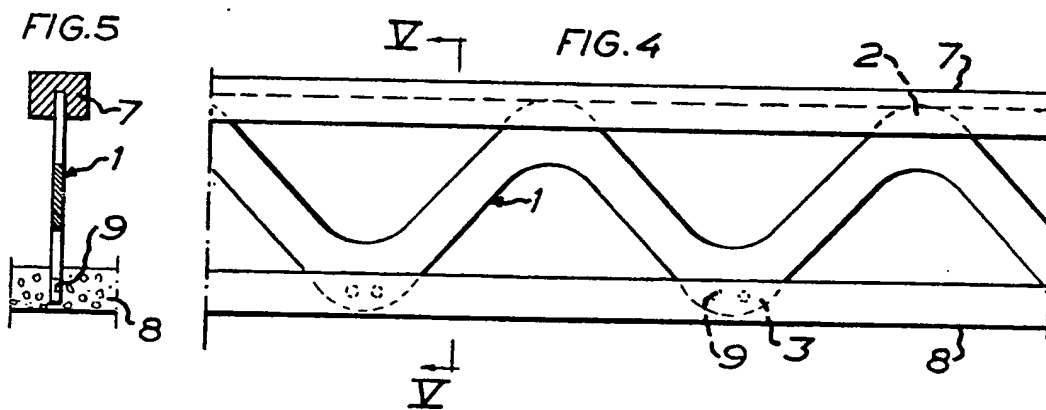
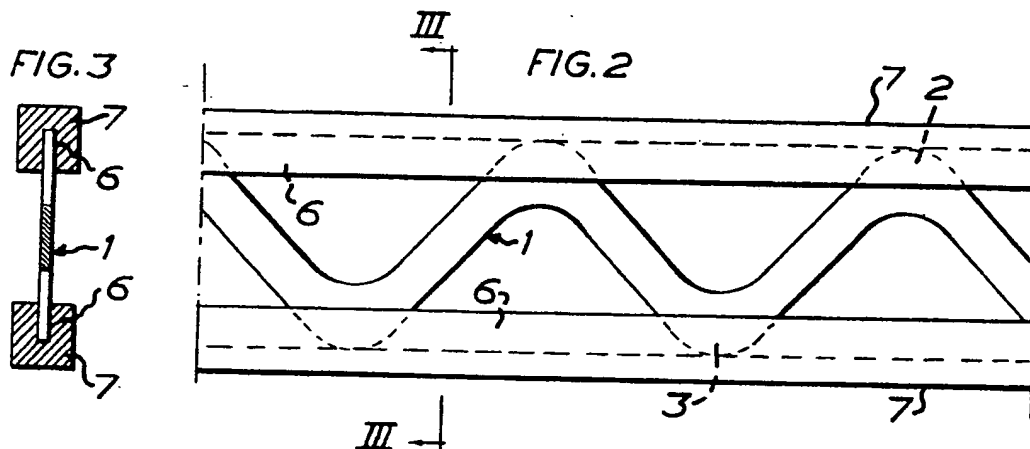
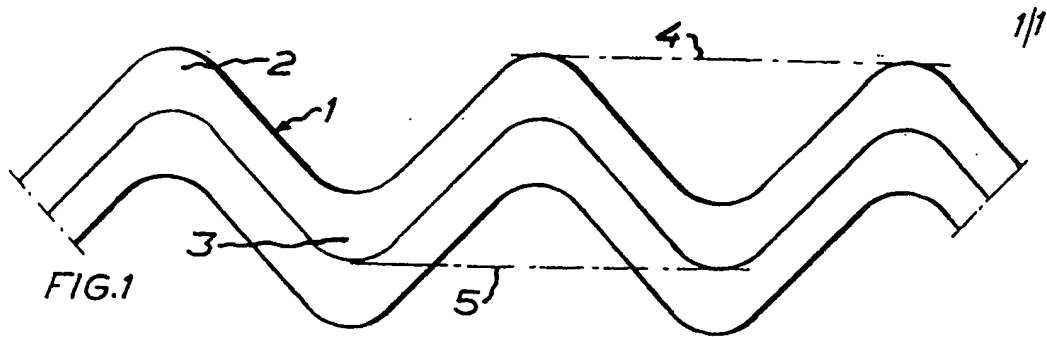
FIG. 4



V

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SPECIFICATION

Wood stud

5 The present invention relates to a wood stud forming a cross-beam, a web or similar component included especially in building constructions. Characteristic of this wood stud is that it consists of a wave-like piece cut out from at least a plywood plate and provided with high wave crests and deep wave troughs and adapted to be joined with the remaining construction by means of its wave crests and/or wave troughs. The wave-like pieces consisting of plywood imparts to the construction approximately the same strength as a whole plywood plate. Thus, the invention results in great saving of material since the consumption of material for the wave-like piece is many times less than for a corresponding, whole plywood plate.

The invention will be described in more detail hereinbelow with reference to the accompanying drawing which illustrates the wood stud according to the invention and some constructions including the wood stud, and in which:

Figure 1 is a side view of a pair of wood studs positioned adjacent each other;

30 *Figure 2* is a side view of a beam construction with the wood stud used as a web;

Figure 3 shows a section of the beam construction on line III-III in Fig. 2;

Figure 4 is a side view of a building component of concrete with wood studs placed on edge;

Figure 5 shows a section of the component on line V-V in Fig. 4; and

40 *Figure 6* is a side view of a beam construction including a web consisting of two longitudinally displaced wood studs placed beside each other.

The wood stud according to the invention consists of a wave-like piece 1 cut out from a plywood plate and provided with high wave crests 2 and deep wave troughs 3 and adapted to be joined with the remaining construction by means of its wave crests 2 and/or wave troughs 3. As is apparent from Fig. 1 the form of wave-like piece 1 of plywood is such that such pieces 1 can be cut from a plywood plate in contiguous relation to each other. The cut is normally carried out with a band saw or the like. The cut may be effected either straight or diagonally across the plywood plate, and the angle to the transverse direction should be about 45°.

As appears from most of the drawing figures, the waves in the wave-like piece 1 may be rounded off. The waves may also have sharp corners, as appears from Fig. 6. The waves may also be more or less zigzag-shaped.

The wave-like piece 1 of plywood material has, in cross-section, a width that is several

times less than the perpendicular distance between the lines 4 and 5 through the wave crests 2 and wave troughs 3 of the piece 1. According to a preferred embodiment the width of the material in cross-section is 6 cm while the distance between the lines 4 and 5 through the wave crests 2 and the wave troughs 3 is 25 cm. Consequently, the consumption of material for the wave-like piece 1 is in this case about four times less than for a corresponding, whole plywood plate.

According to the embodiment shown in Figs. 2 and 3 the wave-like piece of plywood 1 is arranged so that its wave crests 2 and wave troughs 3 will engage longitudinal grooves 6 in ribs 7. Thus, the piece 1 forms together with the ribs 7 an I-beam, in which the piece 1 constitutes the web. In certain cases only the wave crests 2 or only the wave troughs 3 need coact with a rib 7. Alternatively, the groove 6 may be replaced by successive milled-out portions or like recesses complementary to the wave crests 2 or wave troughs 3.

90 In the embodiment shown in Figs. 4 and 5 the wave-like piece of plywood 1 is adapted to be embedded with its wave troughs 3 into a concrete layer 8, the concrete of the said layer 8 being intended to fill up holes through the wave troughs 3 of the plywood piece 1. This embodiment will thus be a further development of the building component described in more detail in U.S. Patent Application Ser. No. 945,797, said component including a number of wood studs 1 extending across the concrete layer 8 and being joined therewith. The wood studs 1, which thus consist of wave-like plywood pieces 1, is in this case provided with ribs 7 at the wave crests 2.

105 In the embodiment of Fig. 6 two wave-shaped pieces 1 are arranged beside each other between two ribs 7 having each one groove 6. The pieces 1 are longitudinally displaced relative to each other so that the wave crests 2 of one piece 1 are positioned straight opposite the wave troughs 3 of the other piece 1. Moreover, the pieces 1 are alternately positioned on opposite sides of each other, whereby their wave crests 2 and wave troughs 3 coact with the grooves 6 in the ribs 7. The beams need not necessarily be entirely covered by two such pieces 1 arranged beside each other, but in certain cases it is sufficient to provide only the end portions of the beam with such double pieces 1. In some cases it is of course possible and preferable to provide beams, wholly or partly, with more than two wave-like pieces 1 arranged beside each other.

125 The wood stud 1 according to the invention may advantageously be used in floor structures and like components for buildings, since the openings therein afford good possibilities for insulation without thermal bridges.

130 The invention is not restricted to that de-

scribed above and shown in the drawings but may be modified within the scope of the appended claims.

5 CLAIMS

1. A wood stud forming a cross-beam, a web or similar component included especially in building constructions, comprising a wave-like piece cut out from at least a plywood plate and provided with high wave crests and deep wave troughs and adapted to be joined with the remaining construction by means of its wave crests and/or wave troughs.

2. A wood stud as claimed in claim 1, wherein the form of the wave-like piece of plywood is such that such pieces can be cut out from a plywood plate in contiguous relation to each other.

3. A wood stud as claimed in claim 1 or 2, wherein the wave-like piece of plywood in cross-section has a width of material which is several, preferably about four times less than the perpendicular distance between lines through the wave crests and wave troughs of the piece.

4. A wood stud as claimed in any of claims 1-3 wherein the wave-like piece of plywood is arranged so that its wave crests and/or wave troughs engage longitudinal grooves or the like in ribs or the like.

5. A wood stud as claimed in any of claims 1-3, wherein the wave-like piece of plywood is adapted to be embedded with its wave crests and/or wave troughs into a concrete layer, the concrete of said layer being intended to fill up holes through the wave crests and/or wave troughs of the plywood piece.

6. A wood stud, substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.